

# PATENT ABSTRACTS OF JAPAN

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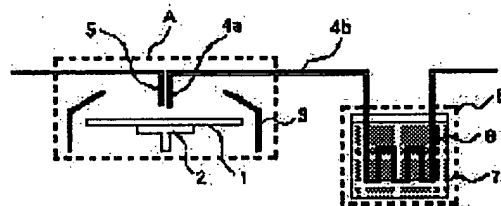
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## (54) METHOD OF DEVELOPMENT IN PHOTOLITHOGRAPHIC PROCESS

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provided a method which is capable of improving wettability of a wafer and suppressing micro bubbles and occurrence of residual stain on a wafer, during the photolithographic process of a semiconductor wafer.

**SOLUTION:** A wafer substrate 1, coated with a resist and exposed, is chucked by vacuum on a freely rotatable wafer chuck 2 set in a development bowl 3 and rotated slowly with a developing solution 8, discharged from a discharging nozzle 4a of the developing solution set above the wafer chuck, and a puddle of the developing solution 8 is formed on the wafer substrate 1. Low-frequency vibration is supplied to the chuck 2 of the wafer or an entire bowl and small vibration of low frequency is supplied as a result to the wafer. The wafer is developed, in its static condition or in its slow rotation condition, slightly vibrated with a low frequency during the development for a desirable time period. The wafer is given by the discharging nozzle 5 a rinse cleaning with a very small vibration during the rinse cleaning process, after the development and the residual water on the wafer has been shaken off by the centrifugal force caused by high-speed rotation after the rinse cleaning.



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